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EXAMINER	
LEE, WILSON	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/776,895	FANG ET AL.	
	Examiner	Art Unit	
	Wilson Lee	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,10,11,13-15,17,21-23,25 and 30-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,10,11,13-15,17,21-23,25 and 30-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Argument

Applicant's arguments filed on 1-7-09 have been fully considered but they are not persuasive.

Applicant argues that the XPath expression is not equivalent to a syntax tree representation of a relational database query.

Examiner respectfully disagrees.

Relational database, as defined by *Microsoft Computer Dictionary*, is a database or database management system that stores information in tables – rows and columns of data – and conducts search by using data in specified columns of one table to find additional data in another table. In relational database, the rows of a table represent records (collections of information about separate items) and the columns represent field (particular attributes of a record).

The following teachings in Gottlob support Examiner's position.

As shown in Col. 5, lines 15-20, Gottlob states:

"The evaluation sets up for each subexpression of the input XPath expression-either as an explicit data structure or implicitly via recursive procedure calls-a so called context-value table, which juxtaposes the possible or relevant contexts on the one hand and the corresponding result value of XPath subexpression for this context on the other hand."

And as shown in Col. 11, line 52 to Col. 12, line 26, Gottlob states:

"The general context-value table principle for obtaining a polynomial-time technique for processing XPath queries…"

And as shown in Col. 13, line 52 to Col. 14, line 11, Gottlob states:

"Now let Q denote an arbitrary XPath expression…First the context-value tables of all subexpressions of Q are computed via Procedure 7..."

And as shown in Col. 15, lines 5-29, Gottlob states:

"During the bottom-up computation of a query Q using Procedure 7, O(|Q|) relations ("context-value tables") are created…."

As shown above, Gottlob teaches that the computation of XPath queries is processed in context-value tables and the characteristic of XPath queries in context-value tables match the definition of relational database.

Especially, Gottlob, Col. 19, lines 10-12 states:

"Finally, note that using arguments relating the top-down method of this sections with (join) optimization technique in relational databases, one may argue that the context-value table principle is also the basis of the above mentioned polynominal time bound of the top-down evaluation method." As admitted by applicant, the top-down method of evaluating an XPath query and join optimization techniques used in relational databases. Therefore, query that is evaluated in relational database must be relational database query.

Claim Rejections – 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 3, 4, 5, 10, 11, 13, 14, 15, 17, 21, 22, 23, 25, 30-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Gottlob et al. (US Patent 7,162,485).

Regarding Claim 1, Gottlob et al. (7,162,485) discloses a method comprising

Identifying a syntax tree ("XML document trees", Col. 1, lines 27-28; "parse tree (expression tree)", Col. 12, line 15-20) of a relational database query ("Top-down processing", Col. 12, lines 15-20;

"with parse tree of a given query", Col. 12, lines 1-2; "top-down method…with (join) optimization techniques in relational databases", Col. 19, lines 10-12); wherein the syntax tree comprises plurality of nodes ("selecting nodes, Col. 1, lines 27-28);

algebrizing the syntax tree representation ("XML document trees", Col. 1, lines 27-28; "parse tree (expression tree)", Col. 12, line 15-20) of a relational database query into a relational algebra representation ("formulating expressions that evaluate to a string, a number or a boolean value", Col. 1, lines 28-30) by performing at least two operations in a single pass (in step d. "**replacing variable** … provided by an input **variable binding**", Col. 26, lines 47-49) through the syntax tree representation ("XML document trees", Col. 1, lines 27-28; "parse tree (expression tree)", Col. 12, line 15-20), wherein at least two of the operations is selected from a group of operations comprising: aggregate binding ("set of **variable bindings**", Col. 24, line 58), constant folding ("**replaced by** the (**constant**) value", Col. 9,. line 31), and tree translation ("**translate function**". Col. 15, line 27).

Regarding Claim 2, Gottlob discloses the method of claim 1 wherein said at least two operations are executed in a predetermined order ("carry out the operation in time given two node sets", Col. 15, lines 52-53) at each of said plurality of nodes[1].

Regarding Claim 3, Gottlob discloses that said at least operations comprises a first operation and second operation (e.g. any operation can be considered as first or second operation. Aggregate binding ("set of **variable bindings**", Col. 24, line 58) can be first, constant folding ("**replaced by** the (**constant**) value", Col. 9, line 31) can be second, or tree translation ("**translate function**". Col. 15, line 27) can be second; and said second operation either executes or does not execute at each of said of nodes and after said first based on a result from said first operation (Gottlob inherently obtains this feature. Operation is either executed or not executed. When the operation is named as second, of course it comes after first operation which based on first operation. Alternatively, when operation is named as first, of course it comes before the second operation).

Regarding Claim 4, Gottlob discloses the method of claim 1 wherein one of said at least two operations comprises constant folding ("replaced by the (constant) value", Col. 9, line 31)

Regarding Claim 5, Gottlob discloses the method of claim 1 wherein said at least two operations comprise aggregate binding ("set of variable bindings", Col. 24, line 58), Col. 9,. line 31), and tree translation ("translate function". Col. 15, line 27).

Regarding Claim 10, Gottlob discloses a method for algebrizing a syntax tree representation ("XML document trees", Col. 1, lines 27-28; "parse tree (expression tree)", Col. 12, line 15-20) of a relational database query ("Top-down processing", Col. 12, lines 15-20; "with parse tree of a given query", Col. 12, lines 1-2; "top-down method…with (join) optimization techniques in relational databases", Col. 19, lines 10-12) into a relational algebra representation ("formulating expressions that evaluate to a string, a number or a boolean value", Col. 1, lines 28-30), said syntax tree comprising a plurality of nodes ("selecting nodes", Col. 1, lines 27-28), and said algebrizing comprising a plurality of operations (such as aggregate binding "set of **variable bindings**", Col. 24, line 58; and tree translation "**translate function**" Col. 15, line 27), said method comprising the inclusion of constant folding ("**replaced** by the (**constant**) value", Col. 9, line 31)as an operation among said plurality of operations

Regarding Claim 11, Gottlob discloses a system for algebrizing a syntax tree representation ("XML document trees", Col. 1, lines 27-28) of a relational database query into a relational algebra representation ("formulating expressions that evaluate to a string, a number or a boolean value", Col. 1, lines 28-30), said syntax tree comprising a plurality of nodes, said system comprising a processor and memory,

an SQL algebrizer (XML query language, XPath or XQuery is well known types of Structured query language) (XML query language taught in Col. 1, lines 13-21) stored in the memory for performing at least two of the plurality of operations (operation inherently performed in a order, whichever perform first, and second) in a predetermined order at each of the plurality of nodes ("carry out the operation in time given two node sets", Col. 15, lines 52-53) in a single pass (in step d. "replacing variable … provided by an input variable binding", Col. 26, lines 47-49) through said syntax tree representation.

a plurality of operations, wherein at least one of the plurality of operations is selected from a group of operations, the group of operations comprising:

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[1] Fig. 4, node E5 has two operations: position () and last ().

aggregate binding ("set of variable bindings", Col. 24, line 58); tree translation ("translate function". Col. 15, line 27); and

Regarding Claim 13, as discussed above in details in the preceding rejection of claim 3, Gottlob meets the limitations of claim 13. Noted that XML query language, XPath or XQuery is the types of SQL.

Regarding Claim 14, Gottlob discloses the system of claim 11 wherein each of said at least two of the plurality of operations are selected from the group of operations such aggregate binding ("set of variable bindings", Col. 24, line 58); constant folding ("replaced by the (constant) value", Col. 9, line 31); and tree translation ("translate function". Col. 15, line 27).

Regarding Claim 15, Gottlob discloses the system of claim 11 wherein said at least two of the plurality of operations comprises at least [all of the group] of operations such as aggregate binding ("set of variable bindings", Col. 24, line 58); constant folding ("replaced by the (constant) value", Col. 9, line 31); and tree translation ("translate function". Col. 15, line 27).

Regarding Claim 17, Gottlob discloses the system of claim 11 wherein said algebrizing comprises one or more of: aggregate binding ("set of variable bindings", Col. 24, line 58); constant folding ("replaced by the (constant) value", Col. 9, line 31); and tree translation ("translate function". Col. 15, line 27).

Regarding Claim 21, Gottlob discloses a computer-readable medium comprising computer-readable instructions for algebrizing a syntax tree representation ("XML document trees", Col. 1, lines 27-28; "parse tree (expression tree)", Col. 12, line 15-20) of a relational database query ("Top-down processing", Col. 12, lines 15-20; "with parse tree of a given query", Col. 12, lines 1-2; "top-down method…with (join) optimization techniques in relational databases", Col. 19, lines 10-12) into a relational algebra representation ("formulating expressions that evaluate to a string, a number or a boolean value", Col. 1, lines 28-30), said syntax tree comprising a plurality of nodes ("selecting nodes", Col. 1, lines 27-28), said computer-readable instructions comprising instructions for performing pass through-constant folding ("replaced by the (constant) value", Col. 9, line 31) on said syntax tree representation.

Regarding Claim 22, Gottlob discloses the computer-readable instructions of claim 34, further comprising instructions for performing the plurality of operations executed-in a predetermined order

("carry out the operation in time given two node sets", Col. 15, lines 52-53) at each of said plurality of nodes (See footnote #1).

Regarding Claim 23, as discussed above in details in the preceding rejection of claim 3, Gottlob meets the limitations of claim 23.

Regarding Claim 25, Gottlob discloses the computer-readable instructions of claim 34, wherein the plurality of operations comprises table and column binding ("context-value table associated with the left direct subexpressions", Col. 29, line 21), aggregate binding ("set of variable bindings", Col. 24, line 58); type derivation ("replacing implicit type conversions with explicit type conversions", Claim 18), property derivation ("desirable properties of methods", Col. 1, line 38; "Procedure 3 has the following properties", Col. 7, line 22), constant folding (replaced by the (constant) value", Col. 9, line 31); and tree translation ("translate function". Col. 15, line 27).

Regarding Claim 30, Gottlob discloses a computer-readable medium comprising computer-readable instructions for algebrizing a syntax tree representation ("XML document trees", Col. 1, lines 27-28; "parse tree (expression tree)", Col. 12, line 15-20) of a relational database query ("Top-down processing", Col. 12, lines 15-20; "with parse tree of a given query", Col. 12, lines 1-2; "top-down method…with (join) optimization techniques in relational databases", Col. 19, lines 10-12) into a relational algebra representation ("formulating expressions that evaluate to a string, a number or a boolean value", Col. 1, lines 28-30), said syntax tree comprising a plurality of nodes ("selecting nodes", Col. 1, lines 27-28), and said algebrizing comprising a plurality of operations, said computer-readable instructions comprising instructions for constant folding ("replaced by the (constant) value", Col. 9, line 31) as an operation among said plurality of operations.

Regarding Claim 31, Gottlob discloses the method of claim 5 wherein said at least two operations (aggregate binding ("set of **variable bindings**", Col. 24, line 58, "**replaced** by the (**constant**) value", Col. 9, line 31; and tree translation ("**translate function**". Col. 15, line 27) further comprises constant folding ("**replaced** by the (**constant**) value", Col. 9, line 31);, and tree translation ("**translate function**". Col. 15, line 27).

Regarding Claim 32, Gottlob discloses the system of claim 11 wherein said group of operations further comprises constant folding ("replaced by the (constant) value", Col. 9, line 31)

Regarding Claim 33, Gottlob discloses the system of claim 15 wherein said at least two operations (aggregate binding ("set of **variable bindings**", Col. 24, line 58, "**replaced** by the (**constant**) value", Col. 9, line 31; and tree translation ("**translate function**". Col. 15, line 27) further comprises constant folding ("replaced by the (constant) value", Col. 9, line 31)

Regarding Claim 34, Gottlob discloses the computer-readable instructions of claim 21 further comprising instructions for performing a plurality of operations in a single pass (in step d. "replacing variable ... provided by an input variable binding", Col. 26, lines 47-49) through the syntax tree representation ("XML document trees", Col. 1, lines 27-28), wherein at least one of the plurality of operations is selected from a group of operations comprising: aggregate binding ("set of variable bindings", Col. 24, line 58), constant folding ("replaced by the (constant) value", Col. 9, line 31), and tree translation ("translate function". Col. 15, line 27).

Regarding Claims 35-37, as discussed in details in the preceding rejections of claims 3, 30-34, Gottlob meets the limitations of claims 35-37.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Microsoft Computer Dictionary, definitions of relational database, XPath, XQuery, XML. Wikipedia shows SQL/XML specifies SQL based extension for using XML in conjunction with SQL.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Wilson Lee whose telephone number is (571) 272-1824.

Papers related to the application may be submitted by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The official fax number is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

3-30-09

/Wilson Lee/
Primary Examiner, Art Unit 2163